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Statistical messages in Chile's presidential campaign as a concern for mathematics education

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In Chile, mandatory secondary education has as one of its main purposes the preparation of future adults for responsible and critical citizenship. In this paper, considering the equal right to vote for citizens as a matter of social justice, my objective is to address the role of statistical messages in the latest Chilean presidential campaign. Drawing upon the framework of critical mathematics education research, I analyse illustrative cases of the formatting power of statistics in the presidential election, and perform a preliminary analysis of classroom situations that involve such authentic cases. The research question to be addressed is: How do 12th grade students handle statistical messages from a recent political campaign in the mathematics class environment?

Statistics is not merely a set of mathematical notions and procedures in contexts. The history of its development takes into account the collection of data in matters concerned by the States, as a means for decision making and comparison. It is this historical context which led to the coining of the German word Statistisk, translated in as "political arithmetic" in English. Put into context, State political concerns and statistical information are notions that go together. This arithmetic serves to validate political opinions. According to Skovsmose and Valero (2012), the relationship between mathematics education and democracy is not trivial, and interactions in the classroom should be explored with significant contextual mathematical narratives in society. In particular, Sánchez and Blomhøj (2010) call for using the role of mathematics in politics in educational practices.

Chilean 12th grade mathematics current version of the curriculum expects students to critically evaluate statistical information extracted from the media. For this matter, I propose the use of examples from Chile's last presidential campaign regarding statistical messages in the classroom. They include presentation and inferences regarding crime rates, economic growth, national debt and electoral polls.
As a research method, the preliminary and a priori analyses of a didactical engineering are covered. Within this framework, and in collaboration with a Chilean teacher and researcher, a didactical design is proposed to have students discussing selected statistical messages in the context of the campaign.
For the analysis of the classroom activities, I propose a systematization of Ole Skovsmose's six entry points or worry questions that allow me to frame students' discussions as being part of a mathematical, technological or reflective knowing. As of the submission of this paper, the findings can only be stated as expected outcomes. In a general sense, the expectation is that students will try to evaluate the political statistics as mathematical or technological truths more spontaneously. With the intervention of the teacher, discussions will take the shape of reflective knowing of the formative power of mathematics in society.